

Weekly Report

9th - 15th, October 2017

Done:

1 Discuss with Prof. Ma and Jia-Kai about what to do next.

Although I had surveyed Predictive VA, but their perspective of PVA is different from mine. In fact, their view is that PVA is suitable for application, and thought I should start my idea from this perspective. However, both surveys (Ross's Lab and mine) focus on the steps of PVA pipeline.

Currently, Prof. Ma is waiting for some data from state emergency dept., he thought it may be a good topic. Also, he mentioned if the data is not ready until sometime, I should prepare for other topics as well. Two major topics are temporal data/event sequence & dynamic graph recommendation.

I talked with Jia-Kai then, and he thought I can start with the graph-related idea.

Besides, we will have a discussion with state emergency dept. on next Monday. Prof. Ma said in the email that he didn't know what stuffs they will bring to ViDI lab so may be a brain storming.

2 Finish learning Chap.4 of one D3 tutorial; Begin reading Tamara's Visualization Analysis and Design.

3 Miscellaneous: 学年小结, 中期延期申请, 荣誉称号申请 etc

To Do:

1 Discussion with those who may provide emergency data.

2 Finish learning D3 chap. 5, 6 (at least)

3 Searching for potential topics.

论文阅读

InfoVis 2000 *Star Coordinates: A Multi-dimensional Visualization Technique with Uniform Treatment of Dimensions* 最近似乎经常看到 star coordinates 这个可视化形式, 所以了解了其基本原理, 我发现这种可视化方法比较灵活, 交互也能达到特定目的.

CHI 2016 *Interacting with Predictions: Visual Inspection of Black-box Machine Learning Models* 医疗数据, 可视化交互的帮助调节参数, 用了简单的数学方法与评估指标, 帮助用户理解不同特征的作用.

EuroVis 2011 *Visual Recommendations for Network Navigation* 利用一些简单的 graph 中的度量, 结合推荐系统常用算法, 为用户在网络中探索进行指南. 想法很简单, 可以在上面做一些扩展, 比如在 layout 保持 mental map 上, 以及节点边增加属性成为属性网, 比如在 graph 指标上, 推荐算法上

VIS 2015 Integrating Predictive Analytics into a Spatiotemporal Epidemic Simulation 关于疾病传播的简单的 PVA 方法. 实现比较简单, 但是文章讲的比较清楚易理解, 而且在生产工作中有一定实际应用价值.

VIS 17 Voila: Visual Anomaly Detection and Monitoring with Streaming Spatiotemporal Data 仔细研究了一下, 发现本文花了大篇幅写张量分解, 结果最后 detect 异常的算法仍然是三年前的, 三年以来不断用, 系统甚至很多部件都在复用. 写着 streaming 其实我觉得也达不到. 但是人家写文章技巧是厉害, 设计上也有一定优势.

安排表

内容	DDL	Milestone
讨论研究主题	10 月底	进行初步讨论, 继续调研
专利	A.S.A.P.	可能得再催一次
D3 学习以及框架	A.S.A.P	精通 D3.js 第四章